In the diploma thesis the charge transfer reaction on thin layer *N*,*N*´,*N*´´,*N*´´´-tetramethyl-tetra-3,4-pyridinoporphyrazinocobalt mediator is studied. The mediator is deposited on electrode surface formed by basal plane of highly ordered pyrolytic graphite. The modified electrode, which displays electrocatalytic activity to oxidation of propylene, has been characterized by cyclic voltammetry, backscattering spectroscopy and atomic force microscopy.